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[54] **METHOD AND SYSTEM FOR ANALYSIS OF LONG TERM PHYSIOLOGICAL POLYGRAPHIC RECORDINGS**

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[58] **Field of Search** ..... 364/415, 413.01, 413.04, 364/413.03, 413.05, 413.06; 128/1 R, 733, 731, 745

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[57] **ABSTRACT**

An analysis system accepts physiological sensor signals, including electroencephalogram (EEG) and other signals commonly sensed in sleep analysis, stores the raw data for later retrieval, extracts features from the digitized signal data which are of a type apt to be significant in classifying and detecting physiological functions (such as the state of sleep) and matches the extracted features to patterns which indicate the type of feature that has been extracted. The matched features are then utilized to classify for each epoch (limited period of time) the state of the physiological function (such as the stage of sleep) for that epoch. The results of the classification analysis are displayed on a CRT screen to the operator on a real time basis and in time correlation with representations of detected features from the various physiological signals. Upon completion of the tests, the operator can interact with the system to change the patterns by which the features are matched and the classification criteria, and can then re-analyze the data and have it redisplayed to demonstrate the results of the re-analysis. In this manner, the operator can interactively utilize his judgment to provide a classification result which is satisfactory to him and which is particularly adapted to the individual subject under test.

37 Claims, 53 Drawing Sheets